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## PUBLIC HEALTH REPORTS.

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[Reports to the Surgeon-General, Public Health and Marine-Hospital Service.]

*A report on prevailing diseases on the Isthmus along the route of the canal, with special reference to the morbidity among the employees of the French Canal Company.*

By J. C. PERRY, Surgeon, Public Health and Marine-Hospital Service.

Having submitted reports on the morbidity, prevailing diseases, and mortality in the cities of Colon and Panama; I have deemed it important to pursue similar studies relative to the diseases prevailing on the Isthmus along the route of the canal.

It is impossible to secure data relative to the sickness prevailing among the inhabitants of the villages in this district, and what deductions are drawn are based upon a knowledge of the sanitary conditions and the testimony of physicians familiar with the character of diseases prevailing among the people in that locality.

There being no hospital except for the employees of the canal company, it is naturally impossible to compile statistics showing the prevalence of climatic diseases and the mortality from the same.

This subject may be divided into two classes, (1) diseases prevailing among the native and negro population in the villages and (2) those among the canal employees.

The consideration of the first class must necessarily be general in the absence of specific data. The mortality in this population is not less than that in the cities of Colon and Panama, and in certain localities it is probably higher on account of the lack of proper medical attention and medicines. I have been told by physicians that the rate of morbidity is high and that malarial fevers of a severe type are frequent. I have also been informed by a competent physician of Colon that malarial fevers are more frequent because of neglect or inability to secure proper treatment and of the fact that the majority of the people do not use quinine as a prophylactic.

The most frequent disease is malarial fever, and an estimate that 75 per cent of the total morbidity is due to this disease is approximately correct. Beriberi, rheumatism, tuberculosis, and diarrheal diseases are also common. There is no record that yellow fever has prevailed among this population, but this is probably due to the absence of susceptible material. Smallpox has occurred in the villages from time to time, and was quite prevalent during the year 1903, especially around Culebra.

Regarding the employees of the French Canal Company, classified under heading number two, more specific data is available, and in consideration of this subject I shall use the reports of Dr. P. Lacroisade,

chief physician of the canal hospital, submitting in detail a table of diseases treated in the hospital during the year 1903, the same having been compiled from the official records of that institution.

The data submitted will embrace a period of six years and will show the general morbidity and the extent to which climatic diseases prevail in a population long resident on the Isthmus and to a large extent immune to ordinary climatic maladies.

The following tabulated statements are taken from Doctor Lacroix's reports:

#### YEAR 1898.

Effective force of personnel (agents and laborers) .....	3, 400
Number sick (morbidity 42 per cent) .....	1, 429
Deaths (mortality 2.03 per cent) .....	69

#### *Morbidity from climatic diseases.*

Simple paludic fevers .....	396
Pernicious paludic fevers .....	1
Bilious intermittent fevers .....	4
Bilious hæmoglobinuric fevers .....	1
Paludic cachexia .....	61
Bilious inflammatory fever .....	1
Total .....	464

The morbidity from climatic diseases represents 33 per cent of the general morbidity; 28 per cent is due to the simple paludic fevers that are curable.

#### *Mortality.*

Climatic maladies .....	9
Acute diseases common to the country .....	8
Chronic diseases common to the country .....	38
Accidents .....	14
Total .....	69

#### *Mortality from climatic diseases.*

Pernicious paludic fevers .....	1
Remittent bilious fever .....	3
Bilious hæmoglobinuric fever .....	1
Paludic cachexia .....	3
Inflammatory bilious fever .....	1
Total .....	9

#### *Mortality according to personnel.*

Agents and clerks .....	0
Temporary employees .....	1
Artisans .....	3
Laborers .....	65

#### *Sanitary observations.*

The mortality from climatic maladies is 13 per cent of the general mortality.

#### YEAR 1899.

Effective force of personnel (agents and laborers) .....	2, 500
Number sick (morbidity 25.60 per cent) .....	640
Number of deaths (mortality 2.36 per cent) .....	59

*Morbidity.*

Climatic diseases .....	146
Acute common diseases .....	255
Chronic common diseases .....	156
Accidents .....	83
Total .....	640

*Morbidity from climatic maladies.*

Simple paludic fevers .....	122
Pernicious paludic fevers .....	4
Malarial cachexia .....	19
Yellow fever .....	1
Total .....	146

Climatic diseases represent 23 per cent of the general morbidity; 19 per cent is due to the simple paludic fevers that are curable.

*Mortality.*

Climatic diseases .....	3
Acute common diseases .....	12
Chronic common diseases .....	37
Accident .....	7
Total .....	59

*Mortality from climatic diseases.*

Pernicious malarial fevers .....	2
Malarial cachexia .....	1
Total .....	3

*Mortality according to personnel.*

Agents and clerks .....	0
Temporary employees .....	1
Artisans .....	1
Laborers .....	57

The mortality from climatic diseases is 5 per cent of the general mortality, and from chronic common diseases 62 per cent. Among the personnel of the company one case of yellow fever was contracted at La Boca in November—a Frenchman, recently arrived, and employed as a laborer at the port. The case recovered. No epidemic diseases. Sanitary condition satisfactory.

## YEAR 1900.

Effective force of the personnel (office force and laborers) .....	2,000
Number sick (morbidity 25 per cent) .....	511
Deaths (mortality 3.25 per cent) .....	65

*Morbidity.*

Climatic diseases .....	170
Acute common diseases .....	170
Chronic common diseases .....	110
Accidents .....	61
Total .....	511

*Morbidity from climatic diseases.*

Simple paludic fevers .....	128
Pernicious paludic fevers .....	5
Remittent bilious fever .....	3
Paludic cachexia .....	33
Yellow fever .....	1
Total .....	170

Climatic diseases represent 33 per cent of the general morbidity; 25 per cent is due to the simple paludic fevers that are curable.

*Mortality.*

Climatic maladies .....	5
Acute common diseases .....	12
Chronic common diseases .....	42
Accidents .....	6
Total .....	65

*Mortality from climatic diseases.*

Pernicious malarial fevers .....	2
Bilious remittent fever .....	1
Paludic cachexia .....	2
Total .....	5

*Mortality according to personnel.*

Agents and clerks (office force) .....	2
Temporary employees .....	0
Artisans .....	3
Laborers .....	60

The mortality from climatic diseases is 7.69 per cent of the general mortality; from chronic common diseases, 65 per cent.

One case of yellow fever occurred in the personnel of the canal company, which ended in recovery. The sanitary conditions may be considered satisfactory, notwithstanding the heavier death rate, owing principally to a greater number of deaths from the usual chronic diseases.

YEAR 1901.

Effective force of personnel (office force and laborers) .....	2,000
Number sick (morbidity, 25.45 per cent) .....	509
Deaths (mortality, 1.75 per cent) .....	35

*Morbidity.*

Climatic diseases .....	137
Acute common diseases .....	182
Chronic common diseases .....	108
Accidents .....	82
Total .....	509

*Morbidity from climatic diseases.*

Simple paludic fevers .....	113
Pernicious paludic fever .....	1
Remittent bilious fevers .....	5
Paludic cachexia .....	18
Total .....	137

Climatic diseases represent 27 per cent of the general morbidity; 22 per cent is due to simple paludic fevers that are curable.

*Mortality.*

Climatic diseases .....	4
Acute common diseases .....	9
Chronic common diseases .....	20
Accidents .....	2
Total .....	35

*Mortality from climatic diseases.*

Pernicious paludic fever .....	1
Bilious remittent fevers .....	3
Total .....	4

*Mortality according to personnel.*

Office force .....	0
Temporary employees .....	0
Artisans .....	2
Laborers .....	33

The mortality from climatic diseases is 11 per cent of the general mortality, and from chronic common diseases, 57 per cent.

## YEAR 1902.

Effective force of personnel (office force and laborers) .....	1,450
Number sick (morbidity 9.75 per cent) .....	141
Deaths (mortality 2.20 per cent) .....	32

*Morbidity.*

Climatic maladies .....	27
Acute common diseases .....	42
Chronic common diseases .....	37
Accidents .....	35
Total .....	141

*Morbidity from climatic diseases.*

Simple paludic fevers .....	16
Pernicious paludic fevers .....	4
Bilious remittent fever .....	1
Paludic cachexia .....	6
Total .....	27

Climatic diseases represent 20 per cent of the general morbidity.

*Mortality.*

Climatic diseases .....	5
Acute common diseases .....	8
Chronic common diseases .....	17
Accidents .....	2
Total .....	32

*Mortality from climatic diseases.*

Pernicious paludic fevers .....	3
Paludic cachexia .....	2

*Mortality according to personnel.*

Office force .....	0
Temporary employees .....	0
Artisans .....	3
Laborers .....	29

## YEAR 1903.

Effective force of personnel (office force and laborers) .....	940
Number sick (morbidity 21.30 per cent) .....	200
Deaths (mortality 3.50 per cent) .....	33

*Number sick.*

Central Hospital .....	154
Cascada Hospital .....	46
Total .....	200
Of these, smallpox .....	38

*Deaths.*

Central Hospital .....	13
Cascada Hospital .....	20
Total .....	33
Of these, smallpox .....	12

*Morbidity.*

Climatic diseases .....	20
Common diseases (including smallpox) .....	147
Accidents .....	33
Total .....	200

*Morbidity from climatic diseases.*

Simple intermittent malarial fevers .....	18
Pernicious malarial fever .....	1
Malarial cachexia .....	1
Total .....	20

*Mortality.*

Pernicious malarial fever .....	1
Malarial cachexia .....	1
Smallpox .....	12
Common diseases .....	17
Accidents and injuries .....	2
Total .....	33

The epidemic of smallpox that existed among the personnel of the company, among the laborers at Culebra, terminated in March, 1903. The mortality from this disease was only among the laborers. No other epidemic disease has existed among the personnel.

*Number of cases and character of diseases treated in the Central Hospital of the French Canal Company at Panama during the year 1903.*

Diseases.	Cases.	Deaths.	Diseases.	Cases.	Deaths.
Malarial fevers .....	18	1	Diarrhea .....	2	1
Malarial cachexia .....	1	.....	Constipation .....	1	.....
Smallpox .....	1	.....	Fistula in ano .....	1	.....
Dysentery .....	2	.....	Hepatitis .....	1	1
Tuberculosis .....	2	.....	Hypertrophy of liver .....	1	.....
Pneumonia .....	4	2	Cirrhosis of liver .....	1	.....
Syphilis .....	2	.....	Arthritis .....	3	.....
Cerebral hemorrhage .....	1	1	Caries of tibia .....	1	.....
Epilepsy .....	1	.....	Lymphangitis .....	1	.....
Neuralgia .....	1	.....	Nephritis .....	2	1
Pleurodynia .....	1	.....	Blenorrhagia .....	2	.....
Sciatica .....	1	.....	Orchitis .....	1	.....
Ophthalmia .....	1	.....	Phlegmon .....	22	.....
Hypertrophy of heart .....	1	1	Ulcers .....	15	.....
Valvular disease of heart .....	1	.....	Eczema .....	1	.....
Arterio-sclerosis .....	1	.....	Gangrene .....	1	.....
Bronchitis .....	7	.....	Herpes zoster .....	2	.....
Broncho-pneumonia .....	2	.....	Lead poisoning .....	1	1
Asthma .....	1	.....	Hernia .....	2	.....
Pleurisy .....	1	.....	Burns .....	2	.....
Congestion of lungs .....	1	1	Injuries .....	26	.....
Gastralgia .....	1	.....	Rheumatism .....	8	.....
Indigestion .....	1	.....	Tetanus .....	1	.....
Gastro-enteritis .....	1	.....	Total .....	154	10
Enteritis .....	2	.....			

*Nationality of the patients treated in the Central Hospital of the French Canal Company at Panama during the year 1903:*

Foreign whites.....	15
West Indian and other negroes.....	118
Colombians.....	21

In establishing an average for these six years it will be seen that in an average personnel of 2,048 the morbidity was 27.90 per cent and the mortality was 2.38 per cent.

However, in considering this low morbidity and mortality it must be pointed out, as Doctor Lacroisade states, that the personnel has been a long time on the Isthmus, is thoroughly acclimated and may be considered exhausted as a field for climatic diseases, because 60 per cent of the general mortality was caused by chronic organic diseases which are incident to all countries, whereas the mortality due to climatic diseases did not exceed 9.20 per cent.

The bureau personnel, forming about 8 per cent of the total number of employees on the Isthmus, gives only 5.70 per cent of the general mortality; 94.30 per cent of the total death rate occurred among the laborers.

Still the above should not be taken as an index of the morbidity that would occur, under the present sanitary conditions in a new force of workmen engaged in constructing different parts of the canal, because the laborers forming the basis of the statistics submitted have been principally engaged at Culebra, a location that topographically offers a much better sanitary site than some other portions of the canal route.

The history of the first days of the canal, when there was a large influx of new workmen, is entirely different from that outlined above.

In conversation with physicians who were employed by the canal company in those days, competent men of accurate scientific observation, I have been told that the morbidity and mortality were very high, the principal diseases being malarial fevers, yellow fever, dysentery and beriberi. The pernicious forms of malarial fever were frequent and fatal. I regret that I have been unable to obtain any statistics of the morbidity and mortality that prevailed among the workmen in the days of the first French Canal Company.

An examination of the statistics submitted shows that in 1898 the morbidity among the agents and laborers was 42 per cent and that the average has been 27.90 per cent, and although this is lower than that which prevails in the towns of Colon and Panama, it must be borne in mind that the population under consideration were strong and vigorous adults, therefore a lower morbidity rate would naturally be expected. For the same reason, and on account of better hygienic surroundings, and professional care and treatment, the above can not be taken as indicative of the morbidity and mortality among the inhabitants of the villages on the line of the canal.

*Summary of work in Chinatown, San Francisco, for the week ended April 23, 1904.*

The following is received from Passed Assistant Surgeon Blue, under date of April 25:

*Week ended April 23.*

Buildings reinspected.....	257
Rooms.....	2,218
Persons inspected.....	2,844
Sick.....	17